



Catalogue no. 92F0088XPB, 92F0090XPB and 92F0091XPB

1996 Large Urban, Small Urban and Rural Enumeration Area (EA) Reference Maps

Reference Guide

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1996 Large Urban, Small Urban and Rural Enumeration Area (EA) Reference Maps

Reference Guide

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Reference Guide for Catalogue Nos. 92F0088XPB, 92F0090XPB and 92F0091XPB

Ottawa

Note of appreciation

Canada owes the success of its statistical system to a long-standing co-operation involving Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

What's New in the 1996 Large Urban Enumeration Area Reference Maps

- the number of maps increases to over 4,200 from 1,500
- the map découpage is by census tract rather than a grid
- the maps vary in scale but have a consistent overall appearance
- all maps are computer-generated
- in areas of congested map detail, the maps are split into either two or four enlargements
- the buffer area on each map sheet, outside the target census tract, does not show enumeration area boundaries
- formerly called "Series 1: Large Urban Centres"

What's New in the 1996 Small Urban Enumeration Area Reference Maps

- some maps in this series are computer-generated but the majority are manually drafted
- the computer-generated maps have the same specifications as the Large Urban EA Reference Maps
- formerly called "Series 2: Small Urban Centres"

What's New in the 1996 Rural Enumeration Area Reference Maps

- federal electoral district (FED) codes have been added where they were not previously identified on the maps (the FED codes are based on the 1987 Representation Order)
- formerly called "Series 3: Rural Areas"

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I. About this Guide

This reference guide was prepared to accompany the 1996 Large Urban (Catalogue No. 92F0090XPB), Small Urban (Catalogue No. 92F0088XPB) and Rural (Catalogue No. 92F0091XPB) Enumeration Area Reference Maps.

This reference guide describes the map content, the general methodology used to create the maps and provides information about data quality.

Geographic terms and concepts in the text are described in the Glossary, Section 5. More details can be found in the *1996 Census Dictionary* (Catalogue No. 92-351-XPE). Supplementary information is provided in the appendices and a list of related products and services is also included.

This reference guide is based on the best information available at the time of its release. It in no way constitutes a warranty of the data in the event that users may observe characteristics that deviate from those stated in this document. All efforts have been made to ensure that the verification of this product has been thoroughly done, however, there is no guaranty that the data are 100% accurate. For further information see Section 4, Data Quality.

2. Overview

2.1. Introduction

Census data are disseminated for a wide range of geographic areas ranging from the national level down to the highly detailed enumeration area (EA) level. Reference maps depict the boundaries of these geographic areas and help users put the census data in a spatial context. Appendix A, Hierarchy of National, Metropolitan and Postal Code Geographic Units, 1996, shows the hierarchy of geographic areas. Also included on the reference maps are names and codes of census geographic areas, and major physical and cultural features such as roads, railroads, coastlines, rivers and lakes and other notable physical features. This reference guide includes information on the three map series listed below.

The enumeration area reference maps cover three distinct types of areas: large urban centres, small urban centres and rural areas. All depict the enumeration area as their smallest reference unit.

In Canada, there are 49,361 EAs defined for the 1996 Census (see Appendix B for a table of the geographical units by province and territory). Together, the three EA reference map series presented in this reference guide cover all of Canada.

2.1.1. Large Urban Enumeration Area Reference Maps (Catalogue No. 92F0090XPB)

These black and white EA reference maps cover all 25 census metropolitan areas (CMAs) and the 18 census agglomerations (CAs) that are in the Census Tract Program. Over 4,200 maps – generally one map per census tract (CT) -- show EA boundaries and codes on a background of detailed street networks and other features in urban areas. Also shown on the maps are CT, census subdivision (CSD), federal electoral district (1987 Representation Order) and CMA or CA boundaries. The maps are packaged by CMA or CA and are arranged in ascending order by CT name; a CT name is a numeric code for example, 0202.01. The relevant 1996 Census Metropolitan Areas, Census Agglomerations and Census Tracts Reference Map is also included in the package as an index map to assist users in locating specific CTs.

2.1.2. Small Urban Enumeration Area Reference Maps (Catalogue No. 92F0088XPB)

Approximately 870 reference maps cover smaller urban municipalities (CSDs) not in the Census Tract Program. The maps depict EA boundaries and codes. Federal electoral district (1987 Representation Order) are also shown on these maps. The size and scale of the maps vary, depending on the area covered.

2.1.3. Rural Enumeration Area Reference Maps (Catalogue No. 92F0091XPB)

Approximately 2,400 maps depict EA boundaries and codes for those areas of Canada not covered by the above two series. These maps cover rural areas and are based on the National Topographic Data Base (NTDB) map sheets created by Natural Resources Canada (NRCan). Also shown on the maps are the boundaries of census subdivisions, census divisions, federal electoral districts (1987 Representation Order) and CMAs and tracted CAs - with their corresponding names and/or codes.

3. About this Product

3.1. Content

3.1.1. Large Urban Enumeration Area Reference Maps

There are over 4,200 maps in this series, consisting of at least one map per census tract (CT). In cases of congested map detail, the CT was split into two or four enlargements. The maps display the 1996 Census geographic boundaries and Street Network File (SNF) features. As well, selected physical and cultural features from the National Topographic Data Base (NTDB) were used in portions of the tracted urban centres not covered by the SNF. Appendix C contains a list, by CMA/CA, indicating the number of CTs and their source, that is. SNF, NTDB, or SNF and NTDB mixed. Appendix D contains a list of the digital NTDB map sheets that were used in map production.

Geographic Hierarchy and Boundaries

Enumeration area (EA) boundaries respect the boundaries of all standard geographic areas. Consequently, EA boundaries may not always follow visible features.

In addition to EAs, the maps depict the following boundaries: census tract (CT), census subdivision (CSD), census metropolitan area / census agglomeration (CMA/CA) and federal electoral district (FED) (according to the 1987 Representation Order). The names and/or codes of these geographic areas are also shown.

To reduce map complexity in some cases where two or more boundaries coincide, only the higher level geographic boundaries are depicted. For example, CT, CSD, FED and CMA/CA boundaries also depict EA boundaries and CMA/CA boundaries also depict CT and CSD boundaries.

Découpage, Map Scale and Map Orientation

The découpage for the reference maps is the CT. The maps depict EAs by individual CT (referred to as the "target" CT). The area inside the target CT is white, whereas the area outside (referred to as "buffer" CTs) is shaded grey. EA boundaries and codes are not shown in the buffer CTs.

Generally, each census tract fits on a 28 cm by 43 cm (11" by 17") page size. Map scales and orientation are based on the 'best fit' approach in order to show the target CT in as large a scale as possible. Thus, scales will vary from map to map (except for the split CT maps), with most maps having a unique scale. Map scales normally affect the way streets are portrayed, therefore, streets are shown as double-line features on maps with scales larger than 1:10,000 (for example, 1:1,500) and as single-line features on maps with scales smaller than 1:10,000 (for example, 1:50,000). Since map orientation was adjusted, adjacent map sheets may have different map orientations (the north arrow may point either straight up or to the left).

If the target CT depicted in the map had cluttered or overlapping details (features and labels), then the map was split into two or four parts in order to show those details better. Every 'split' map has an indicator to the right of the CT name to identify it as part of a series of split maps (for example, 1 of/de 4 and 2 of/de 4, and so on). A split map index box plotted at the lower right margin of the map sheet shows the outline of the entire CT, and how it is approximately represented by the 2 or 4 maps.

EA Symbology

EAs are displayed as polygons or as points, depending upon their area and whether they comprise one address or more than one address, as follows:

- EAs comprising more than one address are shown as polygons, regardless of area.
- individual, single-address EAs smaller than 30,000 square metres are shown as star symbols (except when a CT contains only one EA or if the EA is a ship in which case the EA is depicted as a polygon).
- multiple EAs that are contiguous, share the same address and have a combined area *smaller than* 30,000 square metres are depicted as a single star symbol. The EA codes are then grouped (e.g. 301-303).
- multiple EAs that are contiguous, share the same address and have a combined area *greater than or equal to* 30,000 square metres are depicted as a single polygon. The EA codes are then grouped (e.g. 701-703).

EA Address and Building Information

The map legend area contains information for selected EAs. These EAs can range from a single apartment building, large townhouse complex, hospital, jail, to a Canadian Armed Forces ship. This information, obtained from the Geographic Attribute Data Base (GADB), includes the EA code, name of building or complex (if available) and address. Most of these EAs have a single address, although some may have an address range (multiple addresses).

Features and Names

The NTDB coverage was "edge matched" to the SNF coverage for roads only; thus other features such as railroads, streams and shorelines may not be aligned. In addition, small islands and lakes are not plotted to reduce feature congestion.

Some streets may lack names in the target CT or in the buffer. This restriction is governed by whether the street name and type fit along a segment of the street. As well, in the buffer CT area, CT names were plotted when the CTs are contiguous with the target CT. The remaining CT names in the buffer were plotted only if they fit inside the polygon (as determined by the software).

The NTDB does not contain any hydrographic names so water features are unnamed on maps or parts of maps within NTDB coverage. There may be some truncation of alphanumeric text in the buffer CTs at the map frame.

No interactive edits were done, resulting in sub-optimal text orientation and placement in some cases.

3.1.2. Small Urban Enumeration Area Reference Maps

These maps depict EAs within CSDs. Also shown are the limits of the CSDs and FEDs (according to the 1987 Representation Order) and in the case of adjacency to a CMA or CA, the CMA or CA limits - with their corresponding names, types, and/or codes.

In this series, 11 maps showing 16 CSDs were computer-generated. While the map size is not the same as the Large Urban Enumeration Area Reference Maps, the content and symbology are similar. The following table lists the CSDs for which automated maps are available:

Table 1. CSDs for which automated Small Urban Enumeration Area Reference Maps are available.

CSD Name	Province	SGC* Code(s)
Fredericton, Devon 30, Saint Mary's 24	New Brunswick	1310032, 1310034, 1310035
Scugog, Scugog 34	Ontario	3518020, 3518022
Brock	Ontario	3518039
Fergus	Ontario	3523026
West Lincoln	Ontario	3526021
Wilmot	Ontario	3530020
Wellesley	Ontario	3530027
Stratford	Ontario	3531011
Woodstock	Ontario	3532042
Benito	Manitoba	4620043
Capital, Subd. D, Gordon River 2, Pacheena 1	British Columbia	5917055, 5917815, 5917816

*Standard Geographical Classification

3.1.3. Rural Enumeration Area Reference Maps

These maps depict EAs for the rest of Canada not covered by the above two series. They cover the area that may be called "rural". These maps are based on the NTDB map sheets created by Natural Resources Canada (NRCan). Also shown are the limits of census divisions (CDs), CSDs, FEDs (according to the 1987 Representation Order) and CMA/CAs - with their corresponding names and/or codes. FED codes have been added to the map legend where a FED boundary does not appear on the map. This assists the user in associating the EA code with the appropriate FED.

3.2. General Methodology

3.2.1. Large Urban Enumeration Area Reference Maps

The Large Urban Enumeration Area Reference Maps were generated from digital files using ARC/INFO® Versions 7.03 and 7.04, geographic information systems (GIS) software, produced by Environmental Systems Research Systems Research Institute Inc. (ESRI) in a fully automated mapping production system. This system contained three components: an extract inputs and integrate module, a load input module and a map production module. The relevant SNFs, NTDB coverages and Digital Boundary Files (DBFs) were extracted and integrated in the first component. The load input module prepared the integrated coverage to produce the maps and created the street

coverage and the boundary coverages (EA, CT, CSD, FED, and CMA/CA). The map production module produced the maps by CT.

For further details about the methodology used to produce the maps, refer to Section 4.1 on Data Quality.

3.2.2. Small Urban Enumeration Area Reference Maps

For the manually produced Small Urban Enumeration Area Reference Maps, the background base information was taken from NRCan's National Topographic System (NTS) series, municipal maps, road maps, 1991 Census enumeration maps, and updates from the 1996 Census enumeration process. The map scales, projections and vintages vary. Some maps may have been photographically reduced. The manual Small Urban Enumeration Area Reference Maps are reproductions of those used in the 1996 Census enumeration process.

The automated Small Urban Enumeration Area Reference Maps were produced with background base information from the SNFs and DBFs. An automated mapping production similar to that used in the production of the Large Urban Enumeration Area Reference Maps was adopted. The map scales vary.

For further details about the methodology used to produce the maps, refer to Section 4.2 on Data Quality.

3.2.3. Rural Enumeration Area Reference Maps

The Rural Enumeration Area Reference Maps are reproductions of those used in the 1996 Census enumeration process. The background base information was taken from NRCan's NTS series and provincial maps (MCR 25 and 36), and from the 1991 and 1996 Census enumeration maps. The boundaries, names, and codes reflect those of the 1996 Census.

For further details about the methodology used to produce the maps, refer to section 4.3 on Data Quality.

3.3. Reference Date

The geographic reference date is a date determined by Statistics Canada for the purpose of finalizing the geographic framework for which census data will be collected, tabulated and reported. For the 1996 Census, the geographic reference date is *January 1, 1996*.

Names, boundaries and other attributes of geographic areas change frequently (for example, municipal amalgamations, annexations, name and status changes). Since the geographic framework is used for the census enumeration process, the geographic reference date must be set sufficiently in advance of Census Day to permit all changes to be processed in time. Furthermore, notification of these changes is normally not received from the applicable federal and provincial authorities until after the changes have occurred. For these reasons, the census reports data according to the geographic areas that were in effect on January 1, 1996, provided the information on the changes was received by Statistics Canada by March 1, 1996.

Since census data refer to conditions as they existed on Census Day (May 14, 1996), and the geographic framework is established according to the geographic areas in effect as of January 1, 1996, census data may be reported for geographic areas that have subsequently changed during this period.

The geographic framework established for census purposes may not reflect the actual geographic framework in effect on January 1, 1996, if the appropriate notification from applicable federal and provincial authorities was not received by March 1, 1996.

For all geographic levels (including census subdivisions) the names, types and boundaries are those that were in effect on January 1, 1996. Where notification from provincial or territorial authorities was not received or was received after March 1996, the name, type and/or limits of geographic areas may not correspond with those recognised by provincial or territorial authorities.

3.4. Comparison to 1991 Enumeration Area Reference Maps

3.4.1. Large Urban Enumeration Area Reference Maps

This series has undergone significant enhancements. There is more detail on the 1996 maps. Each map covers a much smaller area than would have appeared on the 1991 series. Each map contains a CT (the "target" CT) with EA limits as well as higher level geographic limits. The buffer area around the target CT contains limits of the surrounding CTs to assist the user in locating adjacent areas. In 1991 the maps were based on a grid that may have required a number of map sheets to portray a single CT. The index maps for the 1996 series are from the 1996 Census Metropolitan Area, Census Agglomerations and Census Tracts Reference Maps: Individual Maps (Catalogue No. 92F0092XPB).

The Large Urban EA Reference Maps vary in scale. The mapping software optimises the coverage for the target census tract within the map frame. In 1991 adjacent map sheets were of a consistent scale.

Target CTs are split into two or four maps to enlarge the detail in congested areas. Users can piece together the parts of the target CT to form a complete census tract.

Enumeration area boundaries are only shown within the target CT. In 1991, the EA boundaries covered each map sheet.

The entire area of the CMA or tracted CA is covered by a digital network and digital boundaries. This gives the complete area a common look. In 1991, there were some manually drafted maps for areas within the CMA or CA not covered by the Street Network File (SNF).

3.4.2. Small Urban Enumeration Area Reference Maps

Some of the maps in this series are automated (16 CSDs on 11 maps). In 1991, all of the maps in this series were manually drafted. The automated maps have the same cartographic specifications as the Large Urban Enumeration Area Reference Maps except these CSDs are not part of the CT Program. However, if they are adjacent to a tracted CMA or CA, the CTs in the adjacent CMA or CA will be shown. The manually drafted maps have the same format as in 1991.

3.4.3. Rural Enumeration Area Reference Maps

These maps have the same format as in 1991. FED codes (according to the 1987 Representation Order) have been added to the map legend where there is no FED limit on the map.

3.5. Limitations

3.5.1. Large Urban Enumeration Area Reference Maps

The production and quality of these maps were subject to several constraints. The following is a summary of constraints, which outlines the sources of the problems. The actual errors are listed in Appendix E.

Automated Production System. In order to produce the large quantity of maps required, the production process was undertaken using the constraints of a largely automated mapping system, rather than a more flexible, interactive one.

Software Limitations. Maps were created using the ARC/INFO® geographic information system software. Map specifications were programmed into the system software in order to present the required information. The feature and text placement are dependent upon the ability of the production system and software.

Data Source Conflicts. Since the NTDB and the SNF are independent data bases, there are cases where the two data bases do not contain the same feature or feature positioning. For example, a small creek that exists in the SNF area continues to the edge of the data base. If the creek is not contained in the NTDB, it will appear on the map as if the creek has suddenly terminated. Attempts were made wherever possible to ensure that street arcs were continuous where the SNF and the NTDB are joined. If a feature was absent in one of the data bases, then continuation of the feature was not possible. The two data bases will only join along a CSD boundary.

The maps should not be used for digitizing purposes nor to determine the precise location of boundaries. They are not intended to serve as a legal or cadastral representation of geographic areas.

3.5.2. Small Urban / Rural Enumeration Area Reference Maps /

The maps should not be used for digitizing purposes nor to determine the precise location of boundaries. They are not intended to serve as a legal or cadastral representation of geographic areas.

3.6. Recommended Applications

The maps are designed to enable users to identify the general location and boundaries of the geographic areas for which 1996 Census data are available.

4. Data Quality

The purpose of this data quality statement is to provide detailed information so that users may evaluate the suitability of the data for their use. Five fundamental components of a data quality statement are: lineage, positional accuracy, attribute accuracy, logical consistency and completeness. (See Statistics Canada, 1992.)

4.1. Large Urban Enumeration Area Reference Maps

4.1.1. Lineage

Lineage includes descriptions of the source material from which the data were derived and the methods of derivation, including the dates of the source material and all transformations involved in producing the final digital files or map products.

4.1.1.1. Source Materials

Each Large Urban Enumeration Area Reference Map shows the Enumeration Areas (EAs) within the target census tract (CT). Every map also shows the federal electoral district according to the 1987 Representation Order (FED), census metropolitan areas/census agglomerations (CMAs/CAs) and census subdivision (CSD) boundaries. The boundaries for these census geographic areas were derived from the 1996 EA Digital Boundary Files. (For more information on the Digital Boundary Files refer to the *Digital Boundary File and Digital Cartographic File 1996 Census Reference Guide*, see References.) The linkages between the EAs, CTs, CSDs, FEDs, CMAs and CAs are those found on the 1996 Census Geographic Attribute Data Base (GADB). (This data base contains attribute information for all standard geographic areas, including the relationships or linkages between these areas.)

The geographic reference date for the 1996 Census boundaries and the associated attributes is January 1, 1996, (the geographic reference date of the 1996 Census).¹ Users should note that the federal electoral district boundaries reflect the 1987 Representation Order. The delineation of enumeration areas for the 1996 Census was based on the 1987 Representation Order. The 1996 Representation Order was proclaimed on January 8, 1996.

The background base map information (coastlines, rivers, lakes, roads, railroads, power lines) was obtained from the 1991 and the pre-census 1996 Street Network Files (SNFs), produced by Statistics Canada, and the National Topographic Data Base (NTDB), produced by Natural Resources Canada (NRCan). Appendix D contains a list of the digital NTS sheets used in the NTDB portions. Where the NTDB files were used in the production of the maps, the road network layer and associated road names were derived from a file provided by Elections Canada. This update to the NTDB was produced by Elections Canada in 1995.

Large Urban Enumeration Area Reference Maps were produced for every CT in Canada. For the 1996 Census there were 4,223 CTs in Canada. About 90% of these CTs (3,819) had complete SNF coverage, 44 (about 1%) had partial SNF coverage and 360 (about 9%) had no SNF coverage. Where SNF coverage was available, this was used to produce the base map feature information within that CT. For CTs with partial SNF coverage, SNF data,

The 1996 Census boundaries and attributes established for census purposes may not reflect the actual boundaries and attributes in effect on January 1, 1996 if the appropriate notification from applicable federal and provincial authorities was never received by March 1, 1996. Statistics Canada enforced a cut off date of March 1, 1996 to ensure that the appropriate changes would be instituted prior to Census Day, May 14, 1996.

NTDB data and Elections Canada data were used in producing the base map feature information. For CTs with no SNF coverage the base map features were entirely derived from the NTDB and the Elections Canada file. Appendix C shows the number of CTs, by their coverage (that is, SNF, mixed, and NTDB) for each census metropolitan area and tracted census agglomeration.

The legend area contains descriptive information for selected EAs. These EAs can range from a single apartment building, large townhouse complex, hospital, jail, to a Canadian Arms Forces ship. This information, obtained from the Geographic Attribute Data Base, includes the EA code, name of the building or complex (if available) and address. The address and building information are based on the enumerator's description, made during the census, of the enumeration areas.

4.1.1.2. Method of Derivation

The maps were produced using a customised automated mapping program developed with ARC/INFO® Versions 7.03 and 7.04. Processing was done in batches, with all the CTs within a CMA or CA processed in one batch.

Where the SNF coverage was available, this was used in the production of the maps. In the areas outside the SNF coverage the NTDB was used in the production of the maps. In SNF-covered areas, the digital boundaries were derived directly from the SNF features. (All updates of boundaries and attributes were made within the SNF environment to create the 1996 Digital Boundary Files in the SNF covered areas.) In the NTDB-covered areas, the Digital Boundary Files were overlaid on the NTDB data and adjusted to match the corresponding features of the NTDB. The NTDB data were then reformatted to conform to the SNF format. Where NTDB and SNF data joined, an interactive matching and joining operation was performed on road features. This resulted in an integrated road network of SNF and NTDB data. All joining of features between the SNF coverage and the NTDB coverage was done along certain CSD boundaries. The Geographic Attribute Data Base was used to link EAs to the other geographic areas. EAs were aggregated to derive the other geographic areas.

When the NTDB data were converted to SNF format, the feature names were also converted to SNF format. This included the Elections Canada road names that were attached to the NTDB data.

In the areas on the maps that are outside the CMA/CA boundaries no feature information is provided. Only the FED and CSD boundaries available from the Digital Boundary Files are provided.

The Large Urban EA Reference Maps were produced in Lambert Conformal Conic Projection. For mapping purposes the SNF and the NTDB data were transformed from the Transverse Mercator projection to Lambert Conformal Conic projection with two standard parallels.

The quality of every map in each CMA/CA was verified. Appendix E contains CMA/CA specific remarks. Users should be aware that there was no interactive adjustment of labels in this entirely automatically produced Large Urban Enumeration Area Reference Map series. Consequently, the labels on the maps are not always legible.

4.1.2. Positional Accuracy

Positional Accuracy is the difference between the "true" position of a feature in the real world and the "estimated" position stored in the digital file or other product

These maps are provided for reference purposes only. They depict the 1996 Census boundaries with respect to the features represented on the maps. They should not be used for digitizing purposes nor to determine the precise location of boundaries.

For this document, the "true" EA boundary is considered to be the boundary as shown relative to the base map features in the Large Urban EA Reference Maps. Here, positional accuracy depends on the quality of the source material used: the NTDB and the SNF for the position of roads, railroads, rivers, lakes, etc. No numerical measurements of positional accuracy were made. The FED, CMA/CA and CT polygons are aggregations of the EA polygons and therefore the positional accuracy of the EA boundaries is reflected in these higher level boundaries. The positional accuracy of the EA boundaries is described here relative to the base map features.

An EA is usually displayed as a polygon enclosed by EA boundaries. However, in the case of selected EAs (usually apartment buildings and collective dwellings), all boundary lines of that EA are "dissolved" and are not shown on the map. Instead, a star point symbol is placed to represent that EA. The star is usually located at the geographic centre of the EA polygon. Due to the size and shape of the polygon it is replacing, the star symbol may touch another feature. (Refer to "EA Symbology" in section 3.1.1 for the criteria used in determining when an EA is depicted by the star point symbol rather than a polygon.)

Some EA boundaries follow hydrographic features. However, in areas with bodies of water, EA boundaries often do not follow the shoreline but extend into water. The boundaries are depicted in this manner to ensure complete coverage of the land areas and islands and/or to follow official municipal boundaries. Some EAs may be represented entirely in water. These EAs are usually created by the intersection of the boundaries of higher level geographic areas. Vessels (ships) and oil rigs can also form EAs. Where possible, these are shown in the water of their home port. One EA, (59006469, CFB Esquimalt) was erroneously digitized in water. It should have been digitized on land. (See Appendix F for a list of the EAs in water).

Where the SNFs and NTDB meet there may exist some feature inconsistencies: features affected include streets and highways, rivers, shorelines, hydroelectric power lines, pipelines, and railroads. These features may be present in one data-base and not in the other.

All streets on maps with a scale greater than or equal to 1:10,000 are displayed as double lines. To avoid congestion all streets are displayed as single lines on maps with scales less than 1:100,000.

4.1.3. Attribute Accuracy

Attribute accuracy refers to the accuracy of the non-positional information attached to each feature such as feature name and code.

The objective of each map is to display information within the target CT. Every surrounding CT that shares a boundary with the target CT was labelled for reference, but other CTs on the map may not be labelled. Depending on space constraints, CTs on the outer edge of the map may not be labelled, or the label may be truncated if it is near the edge of the map.

If an EA was split between two or more maps, then there is a label on each of the maps to identify it. If an EA is shown in multiple parts on any given page, then an EA label is placed in every part of the EA.

The most frequent problem encountered in map production was the positioning of feature labels. With the automated method of labelling and no interactive editing, labels may not be placed in the most appropriate position

and they may overlap other labels. Labels for CSDs, FEDs, CMA and CAs follow their respective boundary lines, and water feature and property labels follow their respective feature lines. As a result label text may be subject to twisting and curving.

Most features derived from the Street Network Files areas are labelled. In NTDB-covered areas, the road names that are used are converted to SNF format. As a result, all feature names on the maps are in capital letters without accents and are truncated to 20 characters. Except for these road names, in areas covered by the NTDB, only the feature type or descriptive name such as 'power line', 'park', 'airport', and so on, is provided. However, in SNF areas proper names, such as 'Sandpiper Lake,' are shown on the maps. For the most part, labels are printed in one language. For maps in Quebec, the labels are in French. The other nine provinces have labels in English.

The only exception to these restrictions on labels is for the Pan-Canadian list of names. Names of hydrographic features having 'pan-Canadian' significance have been established by the Canadian Permanent Committee on Geographic Names (CPCGN). In areas with SNF coverage, where these names were available for hydrographic features, unilingual names were replaced with the bilingual (French and English) Pan-Canadian names where applicable. These names are shown in mixed case (upper case and lower case) and in French are complete with accents. They also were not subject to the 20 character limitation. (The inclusion of the Pan-Canadian names was part of the final processing of the maps in the SNF-covered areas. These changes were not made on the SNF.)

Labelling is dependent upon the direction of digitizing. A polygon label may be on the inside or the outside of the polygon. Property and water polygons are labelled along their edges. Since lines comprising water polygons are labelled rather than the polygons, the two sides of a river may contain slightly different labels. Single line streets are labelled on the left or the right of a street line segment depending on the direction of the digitizing. Escarpment symbology placement was based on the digitizing direction as well, rather than placement based on height.

4.1.4. Logical Consistency

Logical consistency is the degree to which features are accurately represented in the data structure and fulfil all the internal requirements of the data structure. For example, all polygons must close properly and lines should intersect only where intended.

4.1.4.1. Internal Consistency

All higher level boundaries are consistent with the EA boundaries and can be derived as aggregations of complete EAs. EA boundaries generally follow features present on the maps. (Refer to section 4.2.1.2, Method of Derivation.). The closure of the EA polygons was visually verified during the productions of the reference maps.

To reduce map complexity when boundaries coincide, in some cases coincident higher level geographic boundaries also depict lower level ones (for example, CMA/CA boundaries also depict CT and CSD boundaries). The following table presents the coincidence of boundaries on the Large Urban Enumeration Area Reference Maps. If a boundary listed in the column title exists, then the cells below it identify whether a boundary of the horizontal title **must necessarily** exist there as well.

	EA	CT	CSD	CMA/CA	FED
EA	x	yes	yes	yes	yes
CT	no	x	no	yes	no
CSD	no	no	x	yes	no
CMA/CA	no	no	no	x	no
FED	no	no	no	no	x

4.1.4.2. Consistency with Other Products

The Large Urban Enumeration Area Reference Maps are generally consistent with other geographic products such as Digital Boundary Files, other reference maps, SNFs and GeoRef.

The Small Urban EA Reference Maps and the Rural EA Reference Maps were almost completely manually produced based on data from Natural Resources Canada. The map scales differ from those of the Large Urban EA Reference Maps. Manual editing and placement of feature labels have also resulted in differences in the appearance of these maps compared to the Large Urban Enumeration Area Reference Maps.

The 1996 Digital Boundary Files (DBFs) were used in the production of the Large Urban Enumeration Area Reference Maps. However, since the census boundaries in the DBFs were aligned with the NTDB features in the NTDB-covered areas, the census boundaries in NTDB-covered areas on the map are not necessarily in the same positions as those in the DBFs.

Water features on the CMA/CA/CT Reference Maps and the Digital Cartographic Files were taken from sources different from those of the Large Urban Enumeration Area Reference Maps and therefore may not be consistent with them.

Consistency is also generally maintained with the 1996 SNFs in areas covered by the Street Network Files. The only discrepancies introduced while creating the Large Urban Enumeration Area Reference Maps result from the elimination of small lakes and islands. Users should also note that the 1996 Street Network Files were updated after the reference maps were created. These updates are not reflected in the reference maps.

GeoRef allows users to explore the links between all standard levels of geography and to determine geographic codes, names, and population and dwelling counts. All EAs portrayed on the Large Urban Enumeration Area Reference Maps can be found in GeoRef.

4.1.5. Completeness

Completeness expresses the degree to which the geographic entities (features) are captured according to the data capture specifications. It also contains information about selection criteria, definitions used and other relevant mapping rules.

A Large Urban Reference Map was produced for every CT in Canada and included all enumeration areas for that CT.

The completeness of the base map data (features and their labels) for this reference map series is dependent on the data that were available in the SNFs and the NTDB. (Refer to Appendix C for a list of the sources used in the production of the Large Urban Reference Maps.)

In order to reduce map congestion, very small water or island polygons on the maps were automatically removed. The removal of the polygons may cause difficulty in the interpretation of the map. Roads or other features on a removed island and single lines attached to the removed island are left on the map (seemingly in the middle of the water). A single-line river may seem discontinuous where a small water polygon in its course was removed.

Some streets may lack names in the target CT or in the buffer. This restriction was governed by whether the street name and type fit along a segment of the street. As well, in the buffer CT area, CT names were plotted when the CTs are contiguous with the target CT; the remaining CT names in the buffer were plotted only if they fit inside the polygon (as determined by the software).

Not all EAs have EA comments. They are only provided when they were available from the 1996 census enumeration process.

French accents are not printed for street labels.

4.2. Small Urban Enumeration Area Reference Maps

4.2.1. Lineage

4.2.1.1. Source Materials

Maps were produced using both manual and computer automated techniques. The background base map information for the 11 computer automated maps (coastlines, rivers, lakes, roads, railroads, power lines, and so on) was obtained from the 1991 and pre-census 1996 Street Network Files (SNFs). Geographic boundaries were derived from the 1996 EA Digital Boundary File (DBF). The 1996 Geographic Attribute Data Base (GADB) was used to aggregate EAs to higher level geographic areas.

The SNFs were digitized at various scales, generally ranging from 1:2,400 to 1:50,000. The 11 automated maps are produced with the "best fit" method, so that the area being displayed is maximised on the map. Therefore, scales will vary from map to map.

The 1991 EA reference maps were manually updated to produce the 1996 maps for those small urban areas not covered by the SNF. The background base map information for these manually-produced maps was obtained from various source documents including National Topographic System (NTS) maps produced by Natural Resources Canada (NRCan), municipal town plans, road maps, 1991 census enumeration maps, and pre-1996 field update maps. The map projections vary depending upon the sources. The compilation scales for small urban centres ranged between 1:2,400 and 1:250,000.

4.2.1.2. Method of Derivation

The 11 automated maps were produced with a slightly modified version of the customised production system software that was used in the production of the Large Urban Enumeration Area Reference Maps. The quality of these small urban automated maps are similar to the large urban maps. Refer to Section 4.2, Large Urban Enumeration Area Reference Maps, for information regarding the automated Small Urban Enumeration Area Reference Maps.

The EAs within the SNF coverage were generated by extracting the x,y co-ordinates of those physical and cultural features that formed the perimeter of the EAs. The EAs were then formed into polygons. Higher level geographic areas (CTs, CSDs, CDs, FEDs and CMAs/CAs) were created by aggregating the EA boundaries.

For mapping purposes within SNF coverage, the Transverse Mercator (UTM) projection co-ordinates were transformed to Lambert Conformal Conic projection with two standard parallels. In most cases, the standard parallels for each urban centre are separated by two-thirds of the north-south extent of the study area (that is, fixed at one-sixth of the total latitudinal extent). This placement serves to distribute the scale error across the map area. The central meridian divides each urban centre in half. In other cases where urban centres are contiguous or nearly contiguous, the entire area is treated as one entity to position the two standard parallels and central meridian.

For the manually produced maps, some map text was relocated interactively if it overlapped with other textual components. There was no interactive editing for the automated maps listed in Table 1 (see 3.1.2 in the About this Product section).

The aggregation of EAs to higher level geographic areas (CTs, CSDs, CDs, FEDs and CMAs/CAs) were determined from the 1996 Geographic Attribute Data Base (GADB).

4.2.2. Positional Accuracy

Positional accuracy depends on the quality of the source material used. For the computer produced maps this includes the SNF, for the position of roads, railroads, rivers, lakes, etcetera. The accuracy of higher level geographic areas is reflected in the aggregation of EA polygons from the 1996 EA Digital Boundary File (DBF). Refer to the *1996 EA Digital Boundary File and Street Network File Reference Guides* (see References).

For the computer automated maps, it was not always possible to show the actual limits of some small EAs within the Street Network File coverage. In these cases, if an EA polygon was less than or equal to 30,000 square meters, it was depicted by a star symbol.

Source materials for the manually produced maps include both NRCan's NTS series and their provincial maps (MCR 25 and 36) as well as the manual drafting of the base map features and boundaries.

4.2.3. Attribute Accuracy

The 1996 Geographic Attribute Data Base (GADB) was used to validate that all EAs were correctly linked to higher level geographic areas. It was also used to generate the following information: EA codes, CT names, CSD names and types, CD names, FED codes, and CMA/CA names.

On the computer automated maps, most features derived from the SNF are labelled. Street names and water feature names are abbreviated if they are more than 20 characters, due to historical limitations in record layout specifications. Furthermore SNF feature names do not have French accents and are in upper case only.

Names of geographical entities (such as names of provinces, territories, major islands and major bodies of water) having "Pan-Canadian" significance are shown in both official languages, and those names in French are complete with accents.

4.2.4. Logical Consistency

4.2.4.1. Internal Consistency

The boundaries were visually checked for closure on the manually produced maps. For the maps produced by computer, all EA polygons were topologically checked, and a point-in-polygon method was used to validate both proper labelling as well aggregation to higher level geographic areas. For more information, refer to the *1996 EA Digital Boundary File Data Quality Statement* (available from the Geography Division).

To reduce map complexity where boundaries coincide in the automated maps, some higher level geographic boundaries also depict lower level ones. For more details refer to section 4.2.4.1 of the Data Quality Statement for the Large Urban Enumeration Area Reference Maps.

4.2.4.2. Consistency with Other Products

The Small Urban EA Reference maps are generally consistent with other geographic products such as the 1996 Digital Boundary Files, other Reference maps, Street Network Files and GeoRef, a data retrieval and tabular output tool with software and data.

The main information depicted on reference maps includes the boundaries, names and codes of census geographic areas, and major physical and cultural features such as roads, railroads, coastlines, rivers and lakes. The Large Urban Enumeration Area Reference Maps were completely computer-generated. The Rural Enumeration Area Reference Maps were completely manually produced. The map scales of the Small Urban Enumeration Area Reference Maps differ from both of the other two EA Reference Map series. Manual editing and placement of feature labels on manually produced maps has also resulted in differences in the appearance of manually produced versus automated maps. Those Small Urban Enumeration Area Reference Maps that were produced by automated means have different scales than the Large Urban Enumeration Area Reference Maps, however the overall appearance is comparable. Map scales for manually produced maps differ from the computer automated maps for both the Small Urban and Large Urban Enumeration Area Reference Maps.

Water features on the 1996 Census Metropolitan Areas, Census Agglomerations and Census Reference Maps and the 1996 Digital Cartographic Files (DCFs) were taken from different sources and may not be consistent with those features on the Small Urban Enumeration Area Reference Maps.

Consistency is generally maintained with the 1996 Street Network Files in those areas covered by the Street Network Files (SNFs). Users should also note that the updating of the various SNFs continued for several months after the creation of the Small Urban EA Reference Maps. Manually produced maps may not be consistent with the SNF. Streets and other features may not align or may not be present on one or the other data base.

The 1996 Digital Boundary Files used in the production of the computer automated Small Urban Enumeration Area Reference Maps contain boundaries that may not necessarily align with features on the source documents (see section 4.2.1.1).

GeoRef allows users to explore the links between all standard levels of geography and to determine geographic codes, names and population and dwelling counts. All enumeration areas portrayed on any of the EA reference maps including the Small Urban Enumeration Area Reference Maps can be found in GeoRef (Catalogue No. 92F0085XCB).

4.2.5. Completeness

The full EA reference map series consisting of the Large Urban Enumeration Area, Small Urban Enumeration Area and Rural Enumeration Area Reference Maps contains all EAs (49,361) found on the GADB.

The completeness of the base map data is dependent on the data that were available for its creation (refer to the *Street Network File Reference Guide*, see References).

Some textual attribute information may not be depicted or may be abbreviated due to space limitations. For example, not all street names are shown; only those street names that fit on a line segment are plotted in order to avoid text overlap with crossing street names. On the automated maps all street types are abbreviated. Similarly on manually produced maps, street types Rue and Road are omitted whereas all other street types (for example, Avenue, Crescent) are abbreviated. In addition, on the manually produced maps polygons may be split or truncated by the map frame. When this occurs the result may be polygon parts too small to accommodate text labels, therefore the codes and/or names are not shown for these polygons.

4.3. Rural Enumeration Area Reference Maps

4.3.1. Lineage

4.3.1.1. Source Materials

These reference maps show the boundaries, names and codes of census divisions (CDs), census subdivisions (CSDs), census metropolitan areas (CMAs) and census agglomerations (CAs), federal electoral districts (1987 Representation Order), and enumeration areas (EAs).

These maps are copies of those used in the 1996 Census enumeration process.

The boundary information was derived from the compilation maps of the same scale and vintage.

The background base map information was the NTS, and the 1991 census enumeration maps. The NTS 1:50,000 and 1:250,000 series was used for the 10 provinces, with map vintages ranging between 1954 and 1995. The map projection is Universal Transverse Mercator. For the two territories, MCR maps were used; the map scales are 1:1,000,000 for Yukon and 1:4,000,000 for N.W.T., and the map vintages are 1972 and 1974. The map projection is Lambert Conformal Conic, with standard parallels at 49 N and 77 N (for Yukon) and at 64 N and 88 N (for the N.W.T.).

The linkage of EAs, FEDs, CSDs, CDs, CMAs and CAs, was derived from the 1996 Census Geographic Attribute Data Base (GADB). (This data base contains attribute information for all standard geographical areas, including the relationships or linkages between these areas.)

4.3.1.2. Method of Derivation

The maps in this series are copies of the same maps used in the 1996 Census enumeration activities. The maps containing final 1991 Census limits and codes were the basis for the 1996 vintage of the maps. The base maps were created by Natural Resources Canada as part of the NTS.

In a pre-1996 Census step the boundaries, names and codes of all geographic entities on the map were updated as required (that is, EAs, CSDs, CDs, CMAs and CAs) to reflect the 1996 enumeration requirements. In addition the road networks were updated by transcribing from various source documents. The boundaries were then digitized, and stored in the 1996 Digital Boundary Files (DBFs).

In another pre-1996 Census operation, FED codes (according to the 1987 Representation Order), were added to the map legend where no FED limits existed on the maps. To determine whether a map sheet required a FED label an automated process was undertaken to overlay the NTS map sheet grid over the FED boundaries. A list was prepared and FED code labels generated which were to be transcribed to the appropriate map sheet. This was verified by a manual process by reviewing both the map sheets designated as requiring a FED label, and as well, by sampling others that were not designated as requiring a FED label. There were some map sheets incorrectly identified as requiring a FED label, while others were incorrectly identified as not requiring a FED label. In the latter case, labels were created and added to the appropriate map sheets.

In a post-1996 Census procedure the maps were updated again to reflect post-censal enumeration area splits. Where an EA split followed a road that was identified on the enumeration map, then the road feature was added to the base map if none existed previously. These changes were also digitized, and stored into the updated 1996 Digital Boundary Files (DBFs).

4.3.2. Positional Accuracy

Since the geographic area boundaries depicted on these maps are created by aggregating EA polygons, they reflect the same accuracy as the 1996 EA Digital Boundary File. For positional accuracy of the digital boundaries, refer to the data quality statement in the Reference Guide for Digital Boundary Files/Digital Cartographic Files (DBFs/DCFs) available in Statistics Canada's Regional Reference Centres.

4.3.3. Attribute Accuracy

The 1996 Census Geographic Attribute Data Base (GADB) was used to validate that all EAs were correctly linked to higher level geographic areas. It was also used to generate the following information: EA codes, CSD names and types, CD names, FED codes, and CMA/CA names.

Each province and territory approves the names of its CSDs, whereas physical features such as lakes and rivers have official names approved by the Canadian Permanent Committee on Geographical Names (CPCGN). These maps show the names approved by the CPCGN and the provincial and territorial authorities. CPCGN-established "Pan-Canadian" names are shown in both official languages.

4.3.4. Logical Consistency

4.3.4.1. Internal Consistency

The boundaries were verified for closure. This was done both manually and by an automated process. Manually, the maps were viewed to ensure boundaries were all closed. All geographic limits were digitized. As part of the verification process all boundaries were closed and polygons were checked to ensure that they contained only one reference point. All EA polygons were topologically checked using a point-in-polygon method from within ARCInfo®. This validated proper labelling and as well correct linkages to higher levels of geography.

4.3.4.2. Consistency with Other Products

Census reference maps show the location of the geographic areas for which census data are tabulated and disseminated. The main information depicted includes the boundaries, names and codes of census geographic areas, and major physical and cultural features such as roads, coastlines, rivers and lakes. The depiction of dwellings on the maps was determined by NRCan and may, or may not reflect the actual location or presence of a dwelling.

Water features on the CMA/CA/CT Reference Maps and the Digital Cartographic Files were taken from different sources and may not be consistent with that on the Large Urban Enumeration Area Reference Maps.

GeoRef allows users to explore the links between all standard levels of geography and to determine geographic codes, names, and population and dwelling counts. All enumeration areas portrayed on the Rural Enumeration Area Reference Maps can be found in GeoRef.

The maps in this series are manually drafted while some of the Small Urban, and all of the Large Urban EA Reference Maps are automated.

The boundaries found on the rural maps are consistent with those found on the DBFs.

4.3.5. Completeness

In Canada, there are 295 FEDs (1987 Representation Order) and 49,361 EAs defined for the 1996 Census. The full EA reference map series consisting of the large urban areas, the small urban areas, and this -- the rural areas, combine to contain 100% of the EAs (49,361) found in Canada.

The base map features selected for display on the Canada CMA/CA map include only major rivers and lakes and the Trans-Canada Highway.

5. Glossary

Brief definitions of geographic terms and census concepts are presented here in summary form only. Users should refer to the 1996 Census Dictionary (Catalogue No. 92-351-XPE) for the full definitions and additional remarks related to these concepts and definitions.

Buffer CT

Any CT displayed on the map in grey that is not the target CT.

Census Agglomeration (CA)

A **census agglomeration (CA)** is a large *urban area* (known as the *urban core*) together with adjacent urban and rural areas (known as *urban* and *rural fringes*) that have a high degree of social and economic integration with the *urban core*. A CA has an *urban core* population of at least 10,000, based on the previous census. However, if the population of the *urban core* of a CA declines below 10,000, the CA is retired. Once a CA attains an *urban core* population of at least 100,000, based on the previous census, it is eligible to become a CMA. CAs that have *urban cores* of at least 50,000, based on the previous census, are subdivided into *census tracts*. Census tracts are maintained for CAs even if the population of the *urban cores* subsequently fall below 50,000. A CA may be consolidated with adjacent CAs if they are socially and economically integrated. This new grouping is called a *consolidated CA* and the component CAs are called *primary census agglomerations (PCAs)*.

Census Subdivision (CSD)

Census subdivision is the general term applying to municipalities (as determined by provincial legislation) or their equivalent (for example, Indian reserves, Indian settlements and unorganized territories).

In Newfoundland, Nova Scotia and British Columbia, the term also describes geographic areas that have been created by Statistics Canada in co-operation with the provinces as equivalents for municipalities for the dissemination of statistical data.

Census Tract (CT)

Census tracts (CTs) are small geographic units representing urban or rural neighbourhood-like communities created in *census metropolitan areas* and *census agglomerations* (with an *urban core* population of 50,000 or more at the previous census).

CTs are initially delineated by a committee of local specialists (for example, planners, health and social workers, educators) in conjunction with Statistics Canada. Once a *census metropolitan area (CMA)* or *census agglomeration (CA)* has been subdivided into *census tracts*, the *census tracts* are maintained even if the *urban core* population of the CMA or CA subsequently declines below 50,000.

Digital Boundary Files (DBFs)

Digital boundary files (DBFs) are computer files that depict the official boundaries of standard census geographic areas. The boundaries sometimes extend beyond shorelines into water.

Enumeration Area (EA)

An enumeration area (EA) is the geographic area canvassed by one census representative. It is the smallest standard geographic area for which census data are reported. All the territory of Canada is covered by EAs.

Federal Electoral District (FED)

A federal electoral district refers to any place or territorial area entitled to elect a representative member to serve in the House of Commons (source: *Canada Elections Act*, 1990). There are 295 FEDs in Canada according to the 1987 Representation Order and there are 301 FEDs in Canada according to the 1996 Representation Order.

Geographic Code

A geographic code is a unique number used to identify and access standard geographic areas for the purposes of data storage, retrieval and display.

Geographic Reference Date

The geographic reference date is a date determined by Statistics Canada for the purpose of finalising the geographic framework for which census data will be collected, tabulated and reported. For the 1996 Census, the geographic reference date is **January 1, 1996**.

Land Area

Land area refers to the area in square kilometres of the land-based portions of the census geographic areas.

Map Projection

A map projection is both the process and result of transforming positions on the spherical surface of the earth onto a plane (flat) surface.

Province/Territory

Province and territory refer to the major political divisions of Canada. From a statistical point of view, they are a basic unit for which data are tabulated and cross-classified. The ten provinces combined with the two territories cover the complete country.

Reference Map

Census reference maps show the location of the geographic areas for which census data are tabulated and disseminated. The main information depicted includes the boundaries, names and codes of census geographic areas, and major physical and cultural features such as roads, railroads, coastlines, rivers and lakes.

Representative Point

A representative point is a single point that represents a linear feature (*block-face*) or an areal feature (*enumeration area*). The point's location generally indicates either dwelling concentrations or centrality.

Rural Area

Rural areas are sparsely populated lands lying outside *urban areas*.

Standard Geographical Classification (SGC)

The Standard Geographical Classification (SGC) is Statistics Canada's official classification of geographical areas in Canada. The SGC provides unique numeric identification (codes) for three types of geographic areas. These are provinces and territories, census divisions (CDs) and census subdivisions (CSDs). The three geographic areas are hierarchically related.

Street Network Files (SNFs)

The street network files (SNFs) are digital files representing the street network for most large urban centres in Canada. The files also contain other visible physical and cultural features (such as hydrography, railroads, pipelines) and attribute information (for example, street and hydrographic names, and address ranges for streets with assigned addresses).

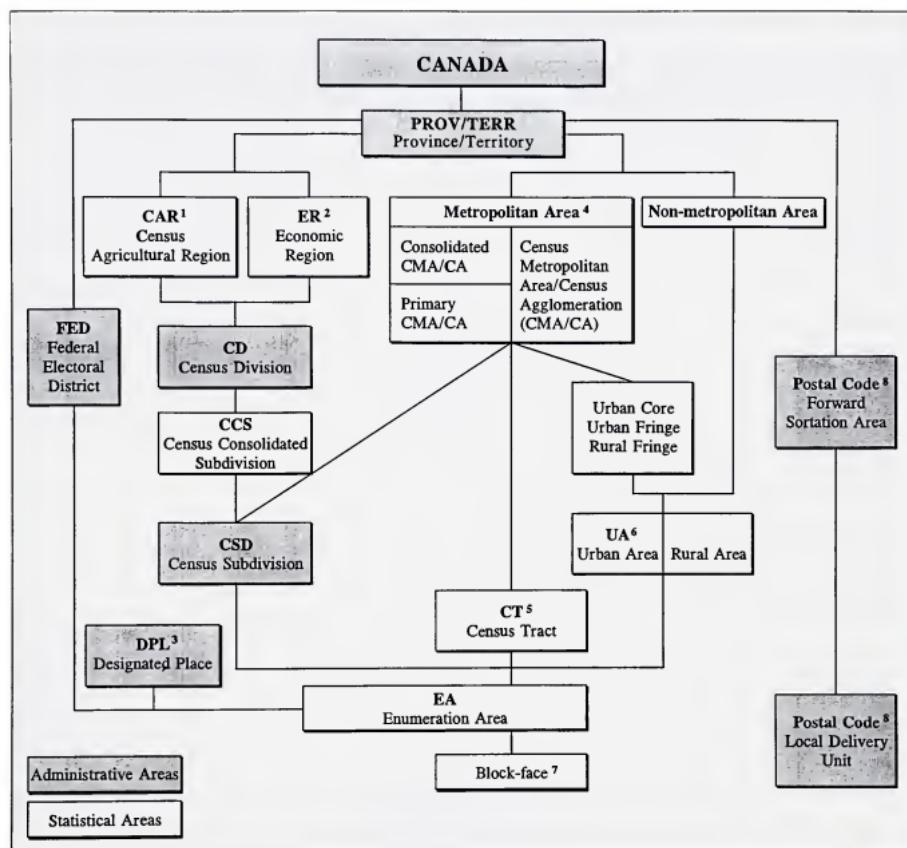
Target CT

The main CT of the map sheet which is displayed in white in the centre of the map.

Urban Area (UA)

Urban areas have minimum population concentrations of 1,000 and a population density of at least 400 per square kilometre, based on the previous census population counts. All territory outside *urban areas* is considered rural. Taken together, urban and rural areas cover all of Canada.

Appendix A. Hierarchy of National, Metropolitan and Postal Code Geographic Units, 1996



¹ Census agricultural regions in Saskatchewan are made up of census consolidated subdivisions.

² Economic regions in Ontario are made up of municipalities (census subdivisions).

³ Currently there are no designated places in Prince Edward Island, Quebec, Yukon Territory and Northwest Territories.

⁴ Five CMAs/CA cross provincial boundaries.

⁵ All CMAs and only CA with urban core population of 50,000 or more at the previous census have census tracts.

⁶ Five UAs cross provincial boundaries.

⁷ Only in areas covered by street network files (SNFs).

⁸ The postal code is captured as provided by the respondent on all the questionnaires for 1996. Although shown and treated as part of the geography hierarchy, strictly speaking, it is not a geographic unit and, therefore, there is no exact relationship between postal codes and enumeration areas.

Appendix B. Geographic Units by Province and Territory, 1996

Geographic unit	Canada		Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.
	1991	1996												
Federal electoral district (1987 RO*)	295	295	7	4	11	10	75	99	14	14	26	32	1	2
Federal electoral district (1996 RO*)	N/A	301	7	4	11	10	75	103	14	14	26	34	1	2
Economic region	68	74	4	1	5	5	16	11	8	6	8	8	1	1
Census division	290	288	10	3	18	15	99	49	23	18	19	28	1	5
Census division	73	73	10	-	-	-	3	-	23	18	19	-	-	-
Communauté urbaine	3	3	-	-	-	-	3	-	-	-	-	-	-	-
County	60	60	-	3	18	15	-	24	-	-	-	-	-	-
District	10	10	-	-	-	-	-	10	-	-	-	-	-	-
District municipality	1	1	-	-	-	-	-	1	-	-	-	-	-	-
Metropolitan municipality	1	1	-	-	-	-	-	1	-	-	-	-	-	-
Municipalité régionale de comté	93	93	-	-	-	-	93	-	-	-	-	-	-	-
Region	7	6	-	-	-	-	-	-	-	-	-	1	-	5
Regional district	29	27	-	-	-	-	-	-	-	-	-	27	-	-
Regional municipality	10	10	-	-	-	-	-	10	-	-	-	-	-	-
United counties	3	3	-	-	-	-	-	3	-	-	-	-	-	-
Territory	N/A	1	-	-	-	-	-	-	-	-	-	-	1	-
Census consolidated subdivision	2,630	2,607	87	68	52	148	1,143	518	128	302	73	82	1	5
Census subdivision ²	6,006	5,984	381	113	110	283	1,599	947	298	970	467	713	35	68
Designated place	N/A	828	77	-	59	172	-	38	52	166	252	12	-	-
Census agricultural region	77	78	3	-	5	4	13	5	12	20	8	8	-	-
Census metropolitan area	25	25	1	-	1	1	6	10	1	2	2	2	-	-
Census agglomeration	115	112	4	2	4	5	27	32	3	7	9	21	1	1
Primary census metropolitan area	12	11	1	-	-	-	3	5	-	-	2	1	-	-
Primary census agglomeration	21	22	1	-	-	-	6	11	-	-	3	1	-	-
Census tract	4,068	4,223	41	-	75	69	1,108	1,799	158	99	386	488	-	-
Urban area	893	929	44	7	38	38	228	265	43	63	103	97	2	6
Enumeration area	45,995	49,361	1,236	267	1,511	1,393	11,684	16,469	2,050	2,844	4,746	6,880	111	170
Street network file (number of CSDs)	342	344	2	-	3	16	114	113	10	5	4	77	-	-
Block-face ³	763,626	817,734	5,068	-	9,707	17,110	187,563	330,658	35,024	21,375	79,954	131,275	-	-
Forward sortation area ⁴	1,368	1,477	32	7	58	44	383	515	63	45	137	187	3	5
Postal code ⁵	652,826	680,910	7,073	2,737	18,864	16,144	175,885	244,909	22,821	20,778	64,530	105,801	864	504

2 For a list of census subdivision types, see Appendix C.

3 Preliminary numbers.

4 Counts derived from the December 1991 and from the July 1996 Postal Code Conversion File.

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- Note:** Underlined numbers indicate that those CMAs, CAs, PCMAs and urban areas crossing provincial boundaries are counted in both provinces.
- * Representation Order

Appendix C. Census Subdivision Types by Province and Territory, 1996

		Total	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.
	Census subdivision type	5,984	381	113	110	283	1,599	947	298	970	467	713	35	68
BOR	Borough	1					1				—			
C	City - Cité	145	3	2	2	7	2	51	5	13	15	43	1	1
CC	Chartered Community	2					—				28		2	—
CM	County (Municipality)	28					—				50		—	—
COM	Community	163	130	33			88						2	34
CT	Canton (Municipalité de)	88					8							
CU	Cantons unis (Municipalité de)	8					—							
DM	District Municipality	50					—				50			
HAM	Hamlet	36					—					2		
ID	Improvement District	10					—	2			8			
IGD	Indian Government District	2					—				—	2		
LGD	Local Government District	21					—		21					
LOT	Township and Royalty	67	67				—							
M	Municipalité	557	—				557				37			
MD	Municipal District	49			12		—							
NH	Northern Hamlet	12					—			12			—	
NT	Northern Town	2					—			2			—	
NV	Northern Village	13					—			13				
P	Paroisse (Municipalité de)	344					344							
PAR	Parish	152					152							
R	Indian Reserve - Réserve indienne	996	1	4	24	19	30	140	77	120	88	487	4	2
RC	Rural Community	1				1								
RGM	Regional Municipality	1				1								
RM	Rural Municipality	404		—			—		106	298	—			
RV	Resort Village	42					—			42	—			
S-E	Indian Settlement - Établissement indien	33		—			5	10	4	1	4	3	6	
SA	Special Area	3									3			
SCM	Subdivision of County Municipality	38				38							13	18
SET	Settlement	31												
SM	Specialized Municipality	2									2			
SRD	Subdivision of Regional District	71										71		
SUN	Subdivision of Unorganized	91	91			—								
SV	Summer Village	54					—				54			
T	Town	685	156	7	33	28		147	36	145	111	14	3	5
TI	Terre inuite	10					10	—						
TP	Township	468	—					468	—					
TR	Terres réservées	9					9	—			—			
UNO	Unorganized - Non organisé	152					—	112	20	11	2		2	5
V	Ville	257					—	257				—		
VC	Village cri	8					—	8			—		—	
VK	Village naskapi	1					—	1	—					
VL	Village	863	—			76	154	108	38	322	117	43	4	1

VN	Village nordique	14						14							
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Appendix D. Number of Census Tracts, by CMA/CA and Source

CMA/CA Name	Code	Type	SNF	SNF/ NTDB	NTDB	# CTs	# Maps
St. John's	001	CMA	21	13	7	41	47
Halifax	205	CMA	49	2	24	75	87
Moncton	305	CA	23	0	1	24	30
Saint John	310	CMA	33	0	12	45	57
Chicoutimi - Jonquière	408	CMA	30	2	3	35	47
Québec	421	CMA	122	5	25	152	224
Sherbrooke	433	CMA	20	0	12	32	44
Trois-Rivières	442	CMA	26	0	8	34	50
Saint-Jean-sur-Richelieu	459	CA	0	0	35	35	35
Montréal	462	CMA	728	5	36	769	837
Ottawa - Hull	505	CMA	211	0	6	217	237
Kingston	521	CA	24	0	11	35	43
Bellefontaine	522	CA	9	6	20	35	63
Peterborough	529	CA	17	0	6	23	43
Oshawa	532	CMA	49	0	0	49	57
Toronto	535	CMA	803	0	10	813	841
Hamilton	537	CMA	163	0	0	163	163
St. Catharines - Niagara	539	CMA	83	0	0	83	123
Kitchener	541	CMA	82	0	0	82	86
Brantford	543	CA	21	0	0	21	21
Guelph	550	CA	21	0	0	21	23
London	555	CMA	88	0	0	88	104
Windsor	559	CMA	47	1	11	59	77
Sarnia	562	CA	24	0	0	24	28
Barrie	568	CA	0	0	24	24	32
North Bay	575	CA	20	0	1	21	29
Sudbury	580	CMA	23	0	15	38	66
Sault Ste. Marie	590	CA	23	0	0	23	23
Thunder Bay	595	CMA	28	1	2	31	37
Winnipeg	602	CMA	156	0	2	158	170
Regina	705	CMA	46	1	2	49	65
Saskatoon	725	CMA	43	0	7	50	74
Lethbridge	810	CA	21	0	0	21	21
Calgary	825	CMA	145	0	8	153	185
Red Deer	830	CA	16	0	0	16	16
Edmonton	835	CMA	151	7	38	196	248
Kelowna	915	CA	24	0	3	27	49
Kamloops	925	CA	22	0	3	25	53
Abbotsford	932	CA	20	1	8	29	37
Vancouver	933	CMA	299	0	0	299	349
Victoria	935	CMA	65	0	0	65	71
Nanaimo	938	CA	0	0	20	20	30
Prince George	970	CA	23	0	0	23	27
Total			3,819	44	360	4,223	4,949

Appendix D. NTDB Map Sheets Used to Produce Large Urban EA Reference Maps

The following table identifies by CMA and CA, those NTDB map sheets that were used in the production the Large Urban EA Reference Maps.

CMA/CA	NTDB Map Sheet
Abbotsford	092G01, 092G08, 092G10, 092G11
Barrie	031D04, 031D05, 031D12
Bellefontaine	030N13, 030N14, 031C03, 031C04, 031C05, 031C06
Brantford	040P01
Calgary	082L13, 082J15, 082J16, 082O01, 082O02, 082O07, 082O08, 082P03, 082P04, 082P05, 082P06
Chicoutimi - Jonquière	022D02, 022D03, 022D05, 022D06, 022D07, 022D08, 022D10, 022D11, 022D12
Edmonton	083G01, 083G02, 083G03, 083G06, 083G07, 083G08, 083G09, 083G10, 083G11, 083G16, 083H03, 083H04, 083H05, 083H06, 083H07, 083H10, 083H11, 083H12, 083H13, 083H14, 083H15, 083I03, 083I04
Guelph	040P08, 040P09, 040P16
Halifax	011D05, 011D11, 011D12, 011D13, 011D14, 011E03, 021A09, 021A16
Hamilton	030M04, 030M05, 040P01, 040P08
Kamloops	082L12, 082L13, 092I06, 092I07, 092I08, 092I09, 092I10, 092I11, 092I14, 092I15, 092I16, 092P01, 092P02, 092P03, 092P07
Kelowna	082E11, 082E12, 082E13, 082E14, 082E15, 082L02, 082L03, 082L04, 092H16
Kingston	031C01, 031C02, 031C07, 031C08, 031C09, 031C10
Kitchener	040P07, 040P08, 040P09, 040P10
Lethbridge	082H10, 082H15
London	040I11, 040I13, 040I14, 040I15, 040P02, 040P03, 040P04
Moncton	021H10, 021H11, 021H14, 021H15, 021H16, 021I01, 021I02, 021I03, 021I06, 021I07
Montréal	031G08, 031G09, 031G16, 031H04, 031H05, 031H06, 031H11, 031H12, 031H13, 031H14
Nanaimo	092C16, 092F01, 092F02, 092F07, 092F08, 092G03, 092G04, 092G05
North Bay	031L02, 031L03, 031L04, 031L05, 031L06
Oshawa	030M14, 030M15, 030M16, 031D01, 031D02, 031D03
Ottawa - Hull	031B13, 031B14, 031F01, 031F08, 031F09, 031F16, 031G03, 031G04, 031G05, 031G06, 031G07, 031G11, 031G12, 031G13
Peterborough	031C05, 031C12, 031D01, 031D08, 031D09
Québec	021L11, 021L12, 021L13, 021L14, 021L15, 021M02, 021M03, 021M04, 021M05, 021M06
Red Deer	083A04, 083A05
Regina	072I05, 072I06, 072I07, 072I08, 072I09, 072I10, 072I11, 072I14, 072I15, 072I16
Saint John	021B15, 021G01, 021G02, 021G07, 021G08, 021G09, 021G10, 021G15, 021G16, 021H04, 021H05, 021H06, 021H11, 021H12
Saint-Jean-sur-Richelieu	031H03, 031H06
Sarnia	040J16, 040O01
Saskatoon	072O09, 072O10, 072O14, 072O15, 072O16, 072P13, 073A04, 073B01, 073B02, 073B03, 073B06, 073B07, 073B08
Sault Ste. Marie	041J05, 041J12, 041K07, 041K08, 041K09, 041K10
Sherbrooke	021E04, 021E05, 021E12, 031H08, 031H09
St. Catharines - Niagara	030L13, 030L14, 030L15, 030M03, 030M04, 030M06
St. John's	001N02, 001N06, 001N07, 001N10, 001N11, 001N15
Sudbury	041I03, 041I05, 041I06, 041I07, 041I10, 041I11, 041I14, 041I15
Thunder Bay	052A, 051P13, 052A03, 052A04, 052A05, 052A06, 052A10, 052A11, 052A12
Toronto	030M05, 030M11, 030M12, 030M13, 030M14, 030M15, 031D03, 031D04, 031D05, 031D06, 040P08, 040P09, 040P16, 041A01
Trois-Rivières	031J01, 031J02, 031J07, 031J08, 031J09, 031J10
Vancouver	092G01, 092G02, 092G03, 092G04, 092G05, 092G06, 092G07, 092G08, 092G10, 092G11
Victoria	092B05, 092B06, 092B11, 092B12, 092C08
Windsor	040J02, 040J03, 040J06, 040J07
Winnipeg	062H09, 062H10, 062H11, 062H13, 062H14, 062H15, 062H16, 062I02, 062I03, 062I04, 062I07, 062I08, 062I10

Appendix E. Types of Errors Found On Large Urban Enumeration Area Maps

ERROR OR COMMENT	FREQUENCY
Spelling errors may occur in the EA comment box.	Rare
The EA comment or address may extend beyond the limits of the EA comment box.	Rare
The words "Incorporated" and "Incorporé" may be abbreviated as "INC."	Few
EA boundaries may exist without following physical feature.	Often
The labels of EAs may be placed close to, or on the EA boundary - especially if the EA polygon is very small.	Many
An EA label may be displayed more than once on the map.	Rare
An EA polygon may not contain an EA label.	Rare
EA labels for stars are usually placed to the upper right of the star. The label may be shifted slightly to avoid conflicting with other labels. They may be placed on the EA star. Labels for EA stars are in a smaller font than labels for EA polygons.	Few
EA stars will be placed approximately where the centre of the polygon would be. The closest road may not be that of the street name given in the EA comment box.	Few
If an EA polygon crosses a feature such as a road or power line, and if the polygon becomes a star, then the star may appear on the feature. If the EA contains water, then the star may touch the water polygon.	Few
An EA polygon that is small enough to be represented by a star will be displayed as a polygon if the address of the EA is not known in the GADB.	Few
A CT polygon with enough space for a label may not contain a CT label.	Often
A CT label may be shifted, and may be placed on top of the CT boundary.	Many
A CT polygon may be labelled more than once with the same label.	Rare
CT boundaries are supposed to follow a physical feature or a CA/CMA boundary. But, sometimes they do not follow either of these.	Often
CT labels should be completely displayed, but may be truncated.	Rare
CSD labels are printed along the side of CSD boundary. If the CSD boundary is not straight where the label is placed, then the CSD label may be twisted, upside-down, or overlapping itself.	Often
CSD labels may not be placed in the most appropriate place.	Often
In order to make some CSD labels fit inside their polygon, the size of the label lettering is slightly reduced.	Few
CSD labels that appear near the edge of a map may be truncated.	Often
A CSD label for polygons at the edge of the map may be truncated or missing if space is limited. Small CSD polygons not at the edge of the map may not be labelled if the polygon is too small to hold a label.	Few
A CSD is only labelled once on a map, regardless of the number of polygons of that CSD there	Few

ERROR OR COMMENT	FREQUENCY
are on the map.	
FED labels are placed along the side of FED boundaries. If the FED boundary is not straight, then the FED label may be twisted.	Few
FED labels may not be labelled in the most appropriate place.	Few
FED labels that appear near the edge of the map may be truncated.	Often
A FED label for FED polygons at the edge of the map may be truncated or missing if space is limited.	Few
A FED is only labelled once on a map, regardless of the number of polygons of that FED there are on the map.	Rare
CA/CMA labels may not be placed in the most appropriate place.	Few
A CA/CMA label for CMA/CA polygons at the edge of the map may be truncated or missing if space is limited.	Few
A CA/CMA is only labelled once on a map, regardless of the number of polygons of that CA/CMA there are on the map.	Rare
For any CMA/CA polygon not containing the target CT, the only information available are CSD labels, FED labels, and CA/CMA labels. No features such as water lines or streets are shown. Some polygons created by a CMA/CA boundary are not CMAs or CAs.	Many
There is no reference to the United States on any map containing a border.	Few
Water features inside the NTDB coverage are not labelled. Many, but not all water features in the Street Network Files are labelled. Some water features may not have a name in the data base, or may be too small to be labelled.	Often
Very small water polygons will be removed from the map in order to reduce map congestion. However, if the polygon exists between two single-line rivers, the polygon removal will make it seem as if there is a break in the river.	Many
Some water labels or island labels are printed in a font size much smaller than expected, usually accompanied by the regular label.	Often
Water labels are unilingual, except for the ones that are on the list of Pan-Canadian label names, which are in both official languages.	Often
Water and island labels follow water lines. If the line is twisted, then the label will be twisted, upside-down, or overlapping itself. Labels may even be placed on the water line. Water and island labelling is the most common of all problems existing on the maps.	Very many
Water feature labels may be located on the land, rather than in the water. Attention should be given to the reading of water labels.	Often
Sometimes a single-line river will split into two lines. Attention should be given in determining whether the two lines represent two single-line rivers or one polygon such as a lake.	Few
Water feature and island labels for maps in Quebec usually will not contain any accents (i.e. "rivière" becomes "riviere", and "île" becomes "ile"). Pan-Canadian water labels will contain the necessary accents.	Few / Quebec Only
The French words "Ruisseau", "Rivière", and English words "Creek", "River" may be abbreviated in order to allow for the name of the creek or river which contains a maximum of 20 characters in the file.	Few

ERROR OR COMMENT	FREQUENCY
The water label "crique" is sometimes used as the French word for "creek". The proper word should be "ruisseau".	Few / Quebec only
Some water labels may contain references to a branch number (i.e. "LITTLE RIVER BR. 2A" or "LITTLE RIVER 001").	Few
A dam may replace a waterline.	Rare
Streets may have several names, and these may all appear along the street (i.e. "Highway 11" and "Yonge St." in the Barrie CA are the same). However, some of the differences are due to inconsistent spelling.	Few
A street may be labelled with the same label several times. This occurs most often in the NTDB areas.	Often
Street names may be spelled incorrectly. With Quebec maps there may be some streets that end in 'des', 'de', 'de la' and 'du'.	Few
The accuracy of street names is dependent upon the accuracy of the input data of the SNF and the NTDB. The accuracy of EA comment data is limited to the accuracy of the GADB.	Unknown. Probably Few.
Street types follow the street name, and some names may lead to confusion when the street type is a part of the name (i.e. "HIGHWAY 5 HY" may be the representation of Highway 5.)	Often
Single-line streets may be labelled either above or below the street, depending on the direction that the street is stored on the geographic data base, and there is no particular rule that can be used to determine the side of the street the label is printed. Attention should be given in determining which streets are associated with a particular label.	
Highways or streets that have separated lanes (i.e. Highway 401) may have each lane labelled. Usually the labels will be the same, but there may be an indicator such as "eastbound" and "westbound".	Few
Double-line streets have their labels on the road. Short roads often result in labels extending past the end of the road, and sometimes the label may not be perfectly placed. Labels of double-line roads follow the change in road direction, but sometimes they do not change perfectly within the road, and the label protrudes outside of the road buffer.	Often
Due to the large number of street labels, street label overlap is common.	Very Many
A double-line road that stops at a feature such as a waterline will sometimes seem to extend past the feature a small bit. It may appear as though the feature is cutting through the tip of the road, or that the road is extending into water. This is because even though the road ends at the feature, the buffer surrounding the road extends a little farther.	Few
Although street types are generally recorded as a standard 2-letter code, there are cases in which the code is incorrect (i.e. Highway should be coded "HY", but sometimes has the code "HW").	Few
Street names may not be put in the most appropriate place.	Many
Streets in Quebec are labelled with the street type in front of the street name, and the type are in French, but some streets are labelled with an English type (i.e. "ST PRINCIPALE" instead of "RU PRINCIPALE").	Few
Street names that are followed by "PROP" or "PROJ" are proposed streets that may or may not be completed at the time of the maps.	Rare

ERROR OR COMMENT	FREQUENCY
There are cases where there is a space between two road segments that seem like they should be connected.	Few
In NTDB areas, segments of features such as power lines, rivers, roads and railroads may not be displayed.	Few
Private boundaries are not labelled in NTDB areas, and there are some boundaries that are not labelled in SNF areas.	Often
Property labels are placed along the side of property boundaries. If the property boundary is not straight, then the label may be twisted. Labels may be on the inside or the outside of the property polygon.	Often
Property labels may be displayed in a small font.	Rare
There are some features such as power lines, pipelines, trails, property, and ditches that are labelled with a numerical indicator. (Ex. Gas Pipeline 001, "Gravel Pit 004").	Few
Property boundaries that co-exist with a double-line (buffered) road may not be seen.	Rare
Several parallel power lines may be labelled several times.	Often
A label may be printed on, or slightly outside the map frame.	Few
The automated placement of text resulted in very many cases of general label overlap. While most of these cases are minor due to street labels overlapping other features or labels, some overlapping creates a congestion that may not be easily read.	Many
When a CA/CMA, CSD, and FED share the same boundary, the CSD and FED labels may overlap each other.	Few
CT labels and FED labels may overlap each other frequently in the buffer area.	Few
FED labels may overlap with other features and labels.	Few
CSD labels may overlap with other features and labels.	Few
Water labels may overlap other features and labels.	Often
EA labels may coincide with other features and labels in such a way that they are not clearly displayed.	Often
Some partial labels or small features may appear without a reason.	Rare
A physical feature may be incorrectly classed in the data base, and the result is the displaying of the incorrect feature. For example, a segment of a river may have been classed as a road.	Rare
DATA INCONSISTENCIES BETWEEN CSDs	
The following is a list of the problems that may occur between any 2 CSDs. Most of these occur when one CSD is covered by the SNF, and the other is covered by the NTDB.	
Physical features such as roads, railroads, rivers, power lines, and pipelines may touch one side of a CSD boundary and not the other. It will seem as though the feature does not continue past the CSD boundary. This is most common where the SNF and NTDB coverages meet. It is usually due to the feature not being carried in one data base.	Often
Physical features such as roads, railroads, rivers, power lines, and pipelines may touch one side of a CSD boundary and continue on the other side, but not line up perfectly to create a continuous feature.	Often

ERROR OR COMMENT	FREQUENCY
A single line road may touch one side of a CSD boundary, and continue on the other side as a multi-laned road or highway.	Rare
Several parallel power lines may touch one side of a CSD boundary and continue on the other side of it as a different number of power lines. This is most common where the SNF and NTDB coverages meet.	Often

Appendix F. List of Water Enumeration Areas

CMA/CA Name	CT Name	EA Code
St. John's	0006.00	10 006 451
St. John's	0006.00	10 006 471
Halifax	0102.00	12 007 108
Halifax	0020.00	12 008 319
Saint John	0026.00	13 010 373
Saint John	0026.00	13 010 374
Montréal	0926.00	24 013 079
Montréal	0832.00	24 018 362
Montréal	0021.00	24 024 021
Montréal	0021.00	24 024 022
Québec	0025.00	24 031 012
Québec	0025.00	24 031 453
Trois-Rivières	0003.00	24 072 374
Hamilton	0204.00	35 008 074
Kingston	0005.00	35 037 273
St. Catharines - Niagara	0015.00	35 070 263
St. Catharines - Niagara	0015.00	35 070 264
Sault Ste. Marie	0009.00	35 073 065
Victoria	0058.00	59 029 266
Victoria	0003.01	59 032 019
Victoria	0003.01	59 032 022

References

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Policy Manual, Policy on Informing Users of Data Quality and Methodology, Statistics Canada, April 7, 1992.

Statistics Canada, [1997]

1996 Census Dictionary. Ottawa: Industry Canada, 1997. 1996 Census of Canada. Catalogue number 92-351-XPE.

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Geography Products and Services

This section provides brief descriptions of Geography products and services related to the 1996 Census. For additional details, contact the nearest Statistics Canada Regional Reference Centre.

General Reference Products

92F0085XCB GeoRef

GeoRef is a powerful data retrieval and tabular output tool with software and data on a CD-ROM. GeoRef allows users to explore the links between all standard levels of geography and to determine geographic codes, names, and population and dwelling counts. In addition to the standard census areas, GeoRef provides EA correspondence data (for 1996 census EAs and 1991 EAs) and an EA reference map listing that facilitates identification of appropriate EA reference maps.

Reference Maps

Reference maps identify census geographic areas and assist users in locating boundaries, allowing them to relate census data to actual physical locations. Over 7,500 reference maps are available for geographic areas that range in size from enumeration areas (the census collection unit) to federal electoral districts (Members of Parliament's ridings), from census tracts (neighbourhoods) to census agglomerations and census metropolitan areas (large urban centres), and from census subdivisions (municipalities) to census divisions (counties). Reference maps are available individually or as sets.

92F0087XPB Federal Electoral Districts/Enumeration Areas (FED/EA) Reference Maps (1987 Representation Order)

These reference maps show 1996 Census enumeration areas by federal electoral district. The federal electoral district boundaries are based on the 1987 Representation Order which was in effect on Census Day (May 14, 1996). These FED/EA maps are designed for the general reference of EA boundaries. For more specific identification of enumeration areas, users should refer to the more detailed EA Reference Maps for Large Urban (92F0090XPB), Small Urban (92F0088XPB) and Rural (92F0091XPB) areas. The FED/EA maps are reproduced on demand.

92F0090XPB Large Urban Enumeration Areas (EA) Reference Maps

These black and white EA reference maps cover all 25 census metropolitan areas (CMAs) and the 18 census agglomerations (CAs) that are in the Census Tract Program. Approximately 4,200 maps - generally one map per census tract - show enumeration area (EA) boundaries and codes on a background of detailed street networks and other visible features. Also shown on the maps are census tract, census subdivision, federal electoral district and CMA or CA boundaries. These maps are reproduced on demand. Package prices are available when all Large Urban (92F0090XPB), Small Urban (92F0088XPB) and Rural (92F0089XPB) EA Reference Maps for Canada or Provinces and Territories are purchased together.

92F0088XPB Small Urban Enumeration Areas (EA) Reference Maps

Approximately 870 reference maps cover smaller urban municipalities (census subdivisions) not in the Census Tract Program. The maps depict enumeration area (EA) boundaries and codes. Federal electoral districts are also shown on these maps. The size and scale of the maps vary, depending on the area covered. These maps are reproduced on demand. Package prices are available when all Large Urban (92F0090XPB), Small Urban (92F0088XPB) and Rural (92F0089XPB) EA Reference Maps for Canada or Provinces and Territories are purchased together.

92F0091XPB Rural Enumeration Areas (EA) Reference Maps

Approximately 2,400 maps depict enumeration area boundaries and codes in rural areas of Canada. Also shown are boundaries for census subdivisions, census divisions, federal electoral districts, census metropolitan areas and tracted census agglomerations. The maps, based on Natural Resources Canada's National Topographic System, are at a scale of 1:50,000 or 1:250,000 for the 10 provinces and at a scale of 1:1,000,000 for Yukon Territory and 1:4,000,000 for Northwest Territories. These maps are reproduced on demand. Package prices are available when all Large Urban (92F0090XPB), Small Urban (92F0088XPB) and Rural (92F0089XPB) EA Reference Maps for Canada or Provinces and Territories are purchased together.

92F0089XPB Census Divisions and Census Subdivisions (CD/CSD) Reference Maps: Individual Maps

A total of 21 provincial maps showing the boundaries, names and codes for census divisions (areas such as counties and regional districts) and census subdivisions (such as cities, municipalities, towns, villages, other local municipal entities, townships and Indian reserves) are available for sale individually. The maps also show the boundaries for census metropolitan areas and census agglomerations. Each province is covered by one to four maps, with scales ranging from 1:375,000 to 1:6,000,000. The maps have the same general look as in 1991, although they have been produced using computer-assisted technology from digital geographic databases. The reference information, including water bodies, major roads and railroads, comes from the Digital Chart of the World (DCW).

Note: The entire set of provincial maps are available in the publication, Standard Geographical Classification, Volume II (Catalogue No. 12-572-XPB). Also included in the publication are three maps of Canada at 1:10,000,000 scale, one showing census divisions, one showing economic regions, and one showing point locations of census metropolitan areas and census agglomerations.

92-354-XPB Census Metropolitan Areas, Census Agglomerations and Census Tracts (CMA/CA/CT)-Reference Maps

This publication includes reference maps of all census metropolitan areas (55 maps covering 25 CMAs) and census agglomerations with census tracts (29 maps covering 18 CAs). The maps show boundaries and names of the census tracts, census subdivisions, primary census metropolitan areas and primary census agglomerations which make up the CMAs/CAs, as well as the urban core, urban fringe and rural fringe. Also shown are rivers, lakes, railroad tracks, provincial boundaries and other significant features. The map scales range from 1:25,000 to 1:2,000,000. The publication also includes a Canada map (1:10,000,000 scale) showing point locations of census metropolitan areas and census agglomerations in 1996.

92F0092XPB Census Metropolitan Areas, Census Agglomerations and Census Tracts (CMA/CA/CT) Reference Maps - Individual Maps

Individual reference maps for census metropolitan areas (55 maps covering 25 CMAs) and census agglomerations with census tracts (29 maps covering 18 CAs) are available. The maps show boundaries and names of the census tracts, census subdivisions, primary census metropolitan areas and primary census agglomerations which make up the CMAs/CAs, as well as the urban core, urban fringe and rural fringe. Also shown are rivers, lakes, railroad tracks, provincial boundaries and other significant features. The map scales range from 1:25,000 to 1:2,000,000.

Note: The entire set of maps is available in the publication *Census Metropolitan Areas, Census Agglomerations and Census Tracts. Reference Maps* (Catalogue No. 92-354-XPB).

Population and Dwelling Counts

Population and dwelling counts from the 1996 Census are available in a variety of formats and geographic breakdowns. In addition to the publication and CD-ROM described below, population and dwelling counts are available in GeoRef (92F0085XCB) and the Block-face Data File (92F0026XDB).

93-357-XPB A National Overview. Population and Dwelling Counts

This publication provides population and dwelling counts established by the 1996 Census of Canada. The levels of geography covered are: provinces and territories, federal electoral districts (1987 Representation Order), census divisions, census subdivisions, designated places, census metropolitan areas and census agglomerations, urban and rural areas. The geographic boundaries of these areas are those that were in force on January 1, 1996 (geographic reference date for the 1996 Census of Canada). The publication also includes population and dwelling counts for forward sortation areas (first three characters of the postal code) as reported by census respondents on Census Day (May 14, 1996).

92F0086XCB Postal Code Counts

Postal Codes Counts is a new product for 1996 that contains population and dwelling counts for all six-character postal codes reported by respondents. The population and dwelling counts are provided by individual postal code, by forward sortation area (FSA - first three characters of the six-character postal code) and by province or territory. The data are provided with Windows™-based software that enables users to perform simple data manipulations such as searching the data set for specific postal codes, importing groups of postal codes for which counts are required and exporting groupings of postal codes. Documentation and reference material are contained in electronic form on the CD-ROM.

Digital Boundary Files and Digital Cartographic Files

Digital Boundary Files (DBFs) portray the official boundaries used for 1996 Census collection and, therefore, often extend as straight lines into bodies of water. In Digital Cartographic Files (DCFs), these boundaries were modified to follow the coastlines and shorelines on the perimeter of Canada's land mass, including major islands. The DCFs also include a separate map layer showing lakes and some rivers and estuaries. This "water" layer can be used for additional reference purposes when mapping or displaying the boundaries. DCFs provide a framework for thematic mapping and geographic analysis that are possible using commercially available geographic information systems

(GIS) or other mapping software. DBFs may not be suitable for mapping or display where realistic shoreline is required. The DCFs are available by standard packages and prices; DBFs are available on request for the same price.

92F0029XDE Provinces and Territories Digital Boundary File/Digital Cartographic File

The Provinces and Territories Digital Boundary File (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. The boundaries of the provinces and territories were generalised to meet the requirements of most desk-top mapping packages. Consequently, this product is not consistent with others in the series. The Provinces and Territories DCF is available as a standard package for Canada.

92F0030XDE Federal Electoral Districts (1987 Representation Order) Digital Boundary File/Digital Cartographic File

The Federal Electoral Districts (1987 Representation Order) Digital Boundary File and Digital Cartographic File were created by aggregating the component EA boundaries from the 1996 Census. They may differ slightly from the Digital Boundary File based on 1991 enumeration areas (92F0070XDB). The Federal Electoral Districts Digital Cartographic File is a new product and is available in two versions. The boundaries of the first version are consistent with all other levels of standard geography. A more generalised version is also available for small scale mapping of the country as a whole. The two versions of the FED DCF are available as a standard package for Canada.

92F0031XDE Federal Electoral Districts (1996 Representation Order) Digital Cartographic File

The Federal Electoral Districts (1996 Representation Order) Digital Cartographic File depicts the boundaries of the Federal Electoral Districts (FEDs) according to the 1996 Representation Order. Since this is not standard level of geography for the 1996 Census, the cartographic file was created with a different methodology and, therefore, is not entirely consistent with other files in the series. Users should be aware that the FED boundaries used for the taking of the 1996 Census were based on the 1987 Representation Order. The 1996 representation order was proclaimed on January 8, 1996 and is in force on the first dissolution of Parliament that occurs at least one year after its proclamation. The Federal Electoral Districts (1996 Representation Order) DCF is available as a standard package for Canada.

92F0032XDE Census Divisions Digital Boundary File/Digital Cartographic File

The Census Divisions Digital Boundary File (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. The Census Divisions DCF is available in two versions. The boundaries of the first version are consistent with all other levels of standard geography. A more generalised version is also available for small scale mapping of the country as a whole. The two versions of the Census Divisions DCFs are available as a standard package for Canada.

92F0033XDE Census Consolidated Subdivisions Digital Boundary File/Digital Cartographic File

The Census Consolidated Subdivisions Digital Boundary (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. Census Consolidated Subdivisions DCFs are available as standard packages for Canada and the provinces and territories.

92F0034XDE Census Subdivisions Digital Boundary File/Digital Cartographic File

The Census Subdivisions Digital Boundary File (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. The Census Subdivisions DCF is available as a standard package for Canada, provinces and territories, census metropolitan areas (CMAs) and census agglomerations (CAs) with census tracts.

92F0035XDE Census Metropolitan Areas/Census Agglomerations Digital Boundary File/Digital Cartographic File

The 1996 Census Metropolitan Areas/Census Agglomerations Digital Boundary File (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. The Census Metropolitan Areas/Census Agglomerations DCF is available as a standard package for Canada.

92F0036XDE Census Tracts Digital Boundary File/Digital Cartographic File

Users of the 1991 Census Tracts Digital Cartographic File will notice a major difference between the 1991 and the 1996 product. In 1991, all bodies of water were integrated with the boundaries on a single map layer. The 1996 boundaries follow the coastlines and shorelines on the perimeter of Canada's land mass, including major islands. Users can see the remaining shorelines (in-land bodies of water) by overlaying the separate "water" layer. The 1996 Census Tracts DCFs are consistent with all other levels of standard geography. This was not case in 1991. The Census Tracts DCFs are available as standard packages for Canada, the provinces, census metropolitan areas and census agglomerations with census tracts.

92F0037XDE Urban Areas Digital Boundary File/Digital Cartographic File

The Urban Areas Digital Boundary File (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. The Urban Areas DCF is available as a standard package for Canada.

92F0038XDE Designated Places Digital Boundary File/Digital Cartographic File

The Designated Places Digital Boundary File (DBF) and Digital Cartographic File (DCF) are two of a series of products that depict boundaries of standard geography levels. Designated places are a new standard geography level for 1996. The Designated Places DCF is available as a standard package for Canada.

92F0039XDE 1996 Census Forward Sortation Areas Digital Cartographic File

The 1996 Census Forward Sortation Areas (FSAs) Digital Cartographic File depicts FSA boundaries derived from postal codes captured from the 1996 Census questionnaires. By analysing the postal codes reported by census households, a single FSA was assigned to each enumeration area (most often the FSA reported by the largest number of census households). FSA polygons were formed by grouping enumeration areas. Therefore, the Census based FSA boundaries respect enumeration area boundaries. The 1996 Census Forward Sortation Areas DCF is available as a standard package for Canada.

92F0040XDE Enumeration Areas (EA) Digital Boundary File/Digital Cartographic File

The Enumeration Areas Digital Cartographic File (DCF) is available for the first time. In 1991, only the Digital Boundary File was available. The EA DCFs are available as standard packages for Canada, the provinces and territories and Census Metropolitan Areas (CMA) and some Census Agglomerations (CA).

Digital Street Files

Geography Division maintains a street network database of Canada's large urban centres on an ongoing basis. While this database represents less than 1 % of Canada's land area, it accounts for 62% of Canada's population. Several products originate from this database including very detailed Street Network Files, less detailed Skeletal Street Network Files, and the Block-face Data File.

92F0024XDE Street Network Files (SNF)

The Street Network Files (SNFs) are digital files representing the street network for most large urban centres in Canada. The files also contain other visible physical and cultural features (such as hydrography, railroads, pipelines) and attribute information (for example, street and hydrographic names and address ranges for streets with assigned addresses). Streets and addresses are updated to reflect the information collected on Census Day - May 14, 1996. In combination with the user's appropriate software, the Street Network Files are useful for route planning, delivery services and mapping. The SNFs are available as standard packages for Canada, all provinces but Prince Edward Island, and for Census Metropolitan Areas (CMA) and some Census Agglomerations (CA).

92F0025XDE Skeletal Street Network Files (SSNF)

The Skeletal Street Network Files (SSNF) are "thinned-out" Street Network Files consisting of cartographic reference features such as major streets (with street names but no address ranges) and some railway features used to define the census tract boundaries. The SSNFs are available as standard packages for Canada, Census Metropolitan Areas (CMA) and some Census Agglomerations (CA).

92F0100XDE - 92F0103XDE; 92F0105XDE - 92F0136XDE Street Network and Feature Extension Files (SNFEF)

The Street Network and Extension Files (SNFEFs) are digital files that extend the coverage of the Street Network Files (SNFs) to the defined limits of the census metropolitan area / census agglomeration (CMA/CA). The SNFEFs contain all the features of the SNFs plus a road and feature network from the National Topographic Data Base (NTDB) extending from the SNF coverage to the CMA/CA limit. The NTDB based portion of the SNFEFs do not have address ranges.

SNFEFs cover a total of 29 centres: 26 CMAs and CAs that have partial SNF coverage, and 3 CAs with no SNF coverage.

Since standard boundary file products may not match the feature extensions in the SNFEF, adjusted boundary files are also available for clients wanting a complete CMA/CA package (see sections on Census Tracts DBF/DCF, Census Subdivisions DBF/DCF and Enumeration Areas DBF/DCF for specific information).

92F0026XDB Block-Face Data File (BFDF)

The Block-Face Data File (BFDF) contains 1996 Census population and dwelling counts for block-faces in urban centres covered by the Street Network Files (92F0024XDE). A block-face is generally one side of a city street between two consecutive intersections; it is also the smallest geographical unit available from Statistics Canada. The BFDF also links the block-face to all other levels of standard geography (enumeration areas and above) through geographic codes. The file includes street names with address ranges as well as co-ordinates for a point representing the approximate centre of each block-face. The BFDFs are available as standard packages for Canada and for large urban centres.

Postal Code Products

The postal code products described below use postal codes that are obtained regularly from Canada Post Corporation. Two other products listed above, Postal Code Counts (92F0086XCB) and 1996 Census Forward Sortation Areas Digital Cartographic File (93F0038XDE), are based on postal codes provided by respondents on census questionnaires.

92F0027XDB 1996 Postal Code Conversion File (PCCF)

The Postal Code Conversion File (PCCF) provides a link between the six-character postal code and the standard 1996 Census geographic areas (such as enumeration areas, municipalities, census tracts, etc.). It also provides the x,y co-ordinates for a point representing the approximate location of the postal code to support mapping. The PCCF is available as standard packages for Canada, the provinces and territories, and for large urban centres.

92F0027UDB 1996 Postal Code Conversion File (PCCF) - Update

The Postal Code Conversion File (PCCF) provides a link between the six-character postal code and the standard 1996 Census geographic areas (such as enumeration areas, municipalities, census tracts, etc.). It also provides the x,y co-ordinates for a point representing the approximate location of the postal code to support mapping. The PCCF is updated on a semi-annual basis. Updates released in July provide new postal codes as of January of the release year. Updates released in January provide new postal codes as of July of the previous year. Clients must purchase the Postal Code Conversion File (92F0027XDB) at the initial cost; then subsequent updated files may be purchased at the update rate. An additional discount on updates is given to PCCF update subscribers. The subscription will require that they pay in advance for at least one updated file per year until the new PCCF for the 2001 Census is released. The PCCF updates are available as standard packages for Canada and provinces and territories.

92F0028XDB Postal Codes by Federal Ridings (1996 Representation Order) File

The Postal Codes by Federal Ridings (1996 Representation Order) File (PCFRF) is a flat ASCII file which provides a link between the six character postal code and Canada's federal electoral districts (1996 Representation Order). A federal electoral district (FED) is any place or territorial area entitled to return a member of Parliament (MP) to serve in the House of Commons and is commonly referred to as a federal riding. The PCFRF is available as standard packages for Canada and for 5 regions - Atlantic Provinces, Quebec, Ontario, Prairie Provinces and Northwest Territories, and British Columbia and Yukon Territory.

92F0028UDB Postal Codes by Federal Ridings (1996 Representation Order) File (PCFRF) - Update

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The Postal Codes by Federal Ridings (1996 Representation Order) File (PCFRF) is a flat ASCII file which provides a link between the six character postal code and Canada's federal electoral districts (1996 Representation Order). A federal electoral district (FED) is any place or territorial area entitled to return a member of Parliament (MP) to serve in the House of Commons and is commonly referred to as a federal riding. The PCFRF is updated on a semi-annual basis. Updates released in July provide new postal codes as of January of the release year. Updates released in January provide new postal codes as of July of the previous year. Clients must purchase the PCFRF (92F0028XDB) at the initial cost; then subsequent updated files may be purchased at the update rate. The PCFRF updates are available for Canada and for 5 regions - Atlantic Provinces, Quebec, Ontario, Prairie Provinces and Northwest Territories, and British Columbia and the Yukon Territory.

Services

97C0005 Geocoding Service

The Geocoding service allows users to define their own geographic areas of study (user defined areas or aggregations of standard census geographic areas) for census data tabulations. This custom geography is produced from an aggregation at the block-face level in large urban centres with Street Network File coverage, and at the enumeration level in small urban centres and rural areas. The user is thereby able to purchase census data for these custom areas. Cost estimates for this service will be provided based on the complexity of the request.

97C0006 Geography Custom Services

If the standard geography products do not satisfy a user's need, Geography Custom Services are available to produce non-standard geographic products by special request. Examples include alternative packaging of Digital Cartographic Files, special data retrievals, manipulations or merges using any of the geography computer files (postal codes, attribute files, boundary files and Street Network Files). Cost estimates for this service will be provided based on the nature and complexity of the request.

97C0007 Geography Custom Mapping

Thematic maps and other custom maps may be produced as a special request. Cost estimates for this service will be provided based on the complexity of the request.

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